

CLAIMS

1. A device for removing doses of plastic material from an extruder (23) by way of at least one removal element (8) which is movable with respect to said extruder (23) and is provided with a receptacle (15) for receiving a dose (6) removed from the outflow orifice (24b) of said extruder (23), said removal element comprising a severing element (14) that is adapted to cut into the plastic material dispensed by said extruder (23) along a severing edge (14a) that advances through the material from one side of said orifice (24b) to the other, said receptacle (15) being shaped so as to accommodate said dose (6) and allow expulsion thereof substantially in the direction of said severing edge (14a), characterized in that said severing edge (14a) is more advanced than said receptacle (15) in an intended direction of movement of said severing element (14).
2. The device according to claim 1, wherein said removal element (8) is provided with an inlet passageway, which is partially bound by said severing edge (14a) and through which said dose (6) is receivable into said receptacle (15), and an outlet passageway, transversely oriented with respect to said severing edge (14a) and through which said dose may be expelled from said receptacle (15).
3. The device according claim 1, or 2, wherein said severing element (14) is so shaped as to interact with said dose (6) to an extent not significantly greater than said severing edge (14a).
4. The device according any one of claims 1 to 3, wherein said severing element (14) is constituted by a blade in which said severing edge (14a) is substantially perpendicular to the direction of advancement of said

blade with respect to said extruder (23) and is suitable to cut the plastic material along a surface that is tangent to the rim (25) of the orifice (24b) of said extruder (23).

- 5 5. The device according to any one of claims 1 to 3, wherein said severing element (14) comprises a metallic wire (34) that is substantially perpendicular to the advancement direction of said severing element (14) with respect to said extruder (23) and is adapted to cut the plastic material along a surface that is tangent to the rim (25) of the orifice (24b) of said extruder (23).
- 10 6. The device according to any one of claims 1 to 5, wherein said removal element (8) is supported in a manner that allows adjustment with respect to said extruder (23) in order to allow to keep said severing edge (14a) on the plane of tangency with the rim (25) of the orifice (24b) of the extruder (23).
- 15 7. The device according to any one of claims 1 to 6, wherein said removal element (8) comprises means for expelling said dose (6) from said receptacle (15).
- 20 8. The device according to any one of claims 1 to 7, wherein said removal element (8) comprises a back wall (12), the severing element (14) that is fixed to a side of said back wall (12), and a movable side wall (13) on the opposite side with respect to said severing element (14), said severing element (14), said back wall (12) and said movable side wall (13) forming said receptacle (15), said side wall (13) being controlled by actuation means for actuation of said side wall (13) between a first end position and a second end position.
- 25 9. The device according to claim 8, wherein said movable side wall (13) is articulated to said back wall (12) and has a rear tab (39) that is contoured so as to
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interact with a respective cylindrical abutment (40), and to actuate said side wall (13) between said first end position and said second end position, a contrast spring (41) being provided which is associated with said side wall (13) in order to actuate said wall (13) between said second end position and said first end position.

10. The device according to claim 8, wherein said movable side wall (13) is associated with an end of a stem of a pneumatic piston (42) for actuating said side wall (13) between said first end position and said second end position.

11. The device according to claim 10, wherein said movable side wall (13) is coupled rigidly to said end of the stem of said pneumatic piston (42).

12. The device according to claim 8, wherein said movable side wall (13) is connected to said back wall (12) by means of an elastic lamina (30) that is actuated by a cam follower.

13. The device according to any one of claims 8 to 12, wherein in said first end position said movable side wall (13) is arranged so as to retain, in said receptacle (15), said dose (6) removed by said cutting element (14), and in that in said second end position said movable side wall (13) is arranged so as to release said dose (6) from said receptacle (15).

14. The device according to claim 12, wherein said cam follower is constituted by a roller (32) that is supported by an arm (31) that is rigidly coupled to said movable side wall (13) of said removal element (8) and is controlled by a stationary cam (33).

15. The device according to any one of claims 1 to 14, for feeding doses (6) of plastic material to a molding carousel (2), which comprises a disk (7) that rotates

synchronously with said carousel (2) and peripherally supports at least one element (8) for removing said doses (6), wherein the orifice (24b) for the exit of said doses (6) has a rim (25) that lies on a surface that is substantially tangent to the plane of rotation of said cutting edge (14a).

16. The device according to claim 15, wherein said disk (7) is arranged with a rotation axis (D) thereof vertical, in that said orifice (24b) is orientated substantially radially with respect to said rotation axis (D), in that said removal element (8) is rigidly coupled to the lower face of said disk (7) so that said cutting edge (14a) is parallel to said rotation axis (D), and in that said receptacle (15) is open downward in order to allow to unload the dose (6) in a direction that is parallel to said rotation axis (D) into a respective recess (5) of the carousel (2) that lies below said removal element (8).

17. The device according to claim 15, wherein said disk (7) is arranged with a rotation axis (D) thereof horizontal, in that said orifice (24b) is parallel to said rotation axis (D), and in that said removal element (8) is rigidly coupled to the lateral surface of said disk (8) so that said cutting edge (14a) is substantially radial with respect to the rotation axis (D) of said disk (7), said receptacle (15) of said dose (6) being shaped so as to unload said dose (6) in a direction that is parallel to said cutting edge (14a).

18. The device according to claim 15, wherein said disk (7) is arranged with a rotation axis (D) thereof inclined, in that said extruder (23) is arranged so that its axis (L) forms an acute angle with said rotation axis (D), and in that said removal element (8) is arranged on

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said disk (7) so that said cutting edge (14a) is tangent to said orifice (24b).

- 5 19. The device according to claim 15, wherein said disk (7) is arranged with a rotation axis (D) thereof inclined and forms a lower face, said removal element (8) being rigidly coupled to said lower face so as to be orientated so that said cutting edge (14a) is horizontal in an upper position for removing said dose (6) and is vertical in a lower position for unloading
- 10 said dose (6) into a respective underlying recess (5).
20. The device according to any one of claims 15 to 19, and further comprising a plurality of said removal elements (8), which are distributed peripherally with respect to the rotation axis (D) of said disk (7) and are
- 15 angularly mutually equidistant.
21. The device according to any one of claims 8 to 20, wherein the nozzle (24) of said extruder (23) has an axis (L) that is curved in order to allow the effective and uniform extrusion of said plastic material.
- 20 22. A device for removing doses of plastic material from an extruder (23) by way of at least one removal element (8) which is movable with respect to said extruder (23) and is provided with a receptacle (15) for receiving a dose (6) removed from the outflow orifice (24b) of said
- 25 extruder (23), said removal element comprising a severing element (14) that is adapted to cut into the plastic material dispensed by said extruder (23) along a severing edge (14a) that advances through the material from one side of said orifice (24b) to the other, said removal element (8) being provided with an inlet passageway which is partially bound by said
- 30 severing edge (14a) and through which said dose (6) is receivable into said receptacle (15) characterized in that, said removal element is further provided with an

outlet passageway transversely oriented with respect to said severing edge (14a) and through which said dose may be expelled from said receptacle (15).

23. A dose of plastic material for compression moulding an object and exiting from an extruder which, after being removed from said extruder, has physical features uniform throughout its thickness.